

April 2015

Name \_\_\_\_\_

## Models Quiz 2

Expectation	Level Achieved
A1 - evaluate powers with rational exponents, simplify algebraic expressions involving exponents, and solve problems involving exponential equations graphically and using common bases;	

1) Simplify

$$\frac{10x^5}{2x^2}$$

$$5x^3$$

$$(x^3)^4$$

$$x^{12}$$

$$\frac{x^{-5} \cdot x^3}{x^2}$$

$$\frac{x^{-2}}{x^2}$$

$$x^{-4}$$

$$1/x^4$$

$$(2x^4)^3$$

$$2^3 x^{12}$$

$$8x^{12}$$

$$\left\{ \begin{array}{l} 2^3 x^{12} \\ 8x^{12} \end{array} \right.$$

2) Rearrange the following to solve for x

a)  $V = 2L - X$

b)  $5T = 9X + 12$

$$X = 2L - V$$

$$5T - 12 = 9X$$

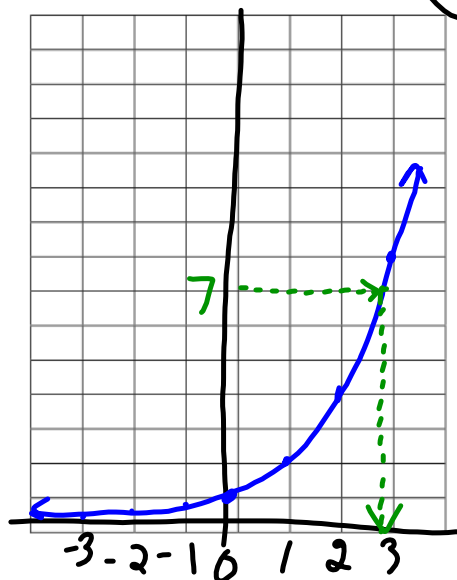
$$\frac{5T - 12}{9} = X$$

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3. Make a table of values for  $y=2^x$  and graph the function for values of  $x$  from -3 to 3.

x	y
-3	$\frac{1}{8}$
-2	$\frac{1}{4}$
-1	$\frac{1}{2}$
0	1
1	2
2	4
3	8

Using your graph above, solve the equation  $2^x=7$ 

$$x \approx 2.8$$

Expectation	Level Achieved
A3 - make connections between formulas and linear, quadratic, and exponential relations	

4. Are the following linear, quadratic or exponential?

$y=9$	$y=-5x^2+9$	$3x+8y-9=0$	$y=3^x+9$
L	Q	L	E

x	y
0	1
1	2
2	4
3	8
4	16
5	32

$\begin{matrix} > 1 \\ > 2 \\ > 4 \\ > 8 \\ > 16 \end{matrix}$ 
 $\begin{matrix} > 1 \\ > 2 \\ > 4 \\ > 8 \end{matrix}$

Ratio  
 $9 \div 1 = 9$   
 $4 \div 2 = 2$   
 $8 \div 4 = 2$   
 $16 \div 8 = 2$   
 $32 \div 16 = 2$

$\therefore$  EXP